

**UNITED STATES DEPARTMENT OF COMMERCE****Patent and Trademark Offic**

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. |
|-----------------|-------------|----------------------|---------------------|
|-----------------|-------------|----------------------|---------------------|

09/725,572 11/30/00 PARK

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002292 MM91/0430
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EXAMINER

| | | |
|----------|----------|--------------|
| ROMAN, A | ART UNIT | PAPER NUMBER |
|----------|----------|--------------|

2812
DATE MAILED:

04/30/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

| | | | |
|------------------------------|-----------------|---------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 09/725,572 | PARK, KEUN NO | |
| | Examiner | Art Unit | |
| | Angel Roman | 2812 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on ____.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-16 is/are pending in the application.

4a) Of the above claim(s) ____ is/are withdrawn from consideration.

5) Claim(s) ____ is/are allowed.

6) Claim(s) 1-16 is/are rejected.

7) Claim(s) ____ is/are objected to.

8) Claims ____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on ____ is/are objected to by the Examiner.

11) The proposed drawing correction filed on ____ is: a) approved b) disapproved.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. ____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) Notice of References Cited (PTO-892)

16) Notice of Draftsperson's Patent Drawing Review (PTO-948)

17) Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.

18) Interview Summary (PTO-413) Paper No(s) ____.

19) Notice of Informal Patent Application (PTO-152)

20) Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 1, 4 and 13-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Seamons et al. U.S. Patent 6,060,397.

Seamons et al. discloses mounting a wafer (substrate) within a chamber (12) of an apparatus 10 (gas-exposure equipment), evacuating an ordinary gas or a surface treatment gas (HMDS) within a chamber (see column 4, lines 10-14) thereby decreasing a pressure within the chamber (see column 4, lines 64-66) while injecting a moisture displacing nitrogen gas into said chamber (see column 4, lines 29-42).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 3, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seamons et al. U.S. Patent 6,060,397 in view of Bellows et al. U.S. Patent 5,728,602.

Seamons et al. is applied as above but lacks anticipation on disclosing information regarding reaching a pressure equal or higher than an atmospheric pressure in the chamber when a surface treatment gas is drawn out by injecting a moisture displacing gas into the chamber.

With respect to reaching atmospheric pressure in a chamber when a surface treatment gas is drawn out by injecting a moisture displacing gas into the chamber, Bellows et al discloses introducing nitrogen gas into a chamber until ambient pressure is attained (see column 4, lines 36-49). In view of this disclosure, it would have been obvious to one of ordinary skill in the art at the time the invention was made to purge a surface treatment gas with nitrogen to cause the pressure in the chamber to become equal to an atmospheric pressure as disclosed in Bellows et al. in the primary reference of Seamons et al. because this will allow subtraction of substrates from the chamber (see column 1, lines 56-59).

Regarding drawing out a surface treatment gas causing a pressure in a chamber to become higher than an atmospheric pressure, it is not patentable subject matter to discover the optimum processing ranges, i.e. pressure, using routine experimentation. In view of this disclosure, it would have been obvious to one of ordinary skill in the art at the time the invention was made to cause a pressure in a chamber to become higher

than an atmospheric pressure because this will contribute to a dislodging and removal of contaminated particles (see column 5, lines 50-54).

Claims 5 and 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seamons et al. U.S. Patent 6,060,397 in view of the prior art disclosed in pages 1-4 of the specification [hereinafter Prior Art].

Seamons et al. is applied as above but lacks anticipation on specifying the conversion of a substrate surface into an organic material by a surface treatment gas; processing a substrate comprising a thin film transistor including at least one of a gate electrode, a source electrode, a drain electrode, and a pixel electrode; and processing a substrate comprising a color filter substrate including at least one of a color filter and a black matrix.

With respect to specifying the conversion of a substrate surface into an organic material by a surface treatment gas, Prior Art discloses converting a surface of a substrate into an organic material (see page 3, lines 1-6). In view of this disclosure, it would have been obvious to one of ordinary skill in the art at the time the invention was made to convert a surface of a substrate into an organic material as disclosed in Prior Art in the primary reference of Seamons et al. because it will improve an adhesive force between a photoresist and a substrate.

Regarding processing a substrate comprising a thin film transistor including at least one of a gate electrode, a source electrode, a drain electrode, and a pixel electrode, Prior Art discloses processing a substrate comprising a thin film transistor

including at least one of a gate electrode, a source electrode, a drain electrode, and a pixel electrode (see figure 1). In view of this disclosure, it would have been obvious to one of ordinary skill in the art at the time the invention was made to process a substrate comprising a thin film transistor including at least one of a gate electrode, a source electrode, a drain electrode, and a pixel electrode as disclosed in Prior Art in the primary reference of Seamons et al. because these are common integrated circuits devices used in the semiconductor industries.

With respect to processing a substrate comprising a color filter substrate including at least one of a color filter and a black matrix, Prior Art discloses processing a substrate comprising a color filter substrate including at least one of a color filter and a black matrix (see page 2, lines 20-25). In view of this disclosure, it would have been obvious to one of ordinary skill in the art at the time the invention was made to process a substrate comprising a color filter substrate including at least one of a color filter and a black matrix as disclosed in Prior Art in the primary reference of Seamons et al. because these are common integrated circuits devices used in the semiconductor industries.

Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seamons et al. U.S. Patent 6,060,397.

The subject matter in claims 6-8 is drawn to an apparatus (chamber). No weight is given to apparatus limitations in method claims (see *In re Edwards* 128 USPQ 387 (CCPA 1961)), therefore no patentable weight is given to claims 6-8.

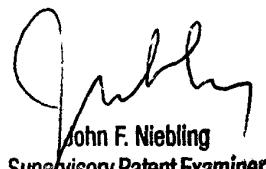
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angel Roman whose telephone number is (703) 306-0207. The examiner can normally be reached on Monday to Friday from 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Niebling can be reached on (703) 308-3325. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7724 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

Angel Roman
Art Unit 2812



John F. Niebling
Supervisory Patent Examiner
Technology Center 2800